



Updated July 22, 2011

Summary: Based on climate predictions, current conditions, and field observations, the threat for mass coral bleaching within the FKNMS is **MODERATE**.

NOAA Coral Reef Watch Satellite Coral Bleaching Alert Area
July 21, 2011 (experimental)

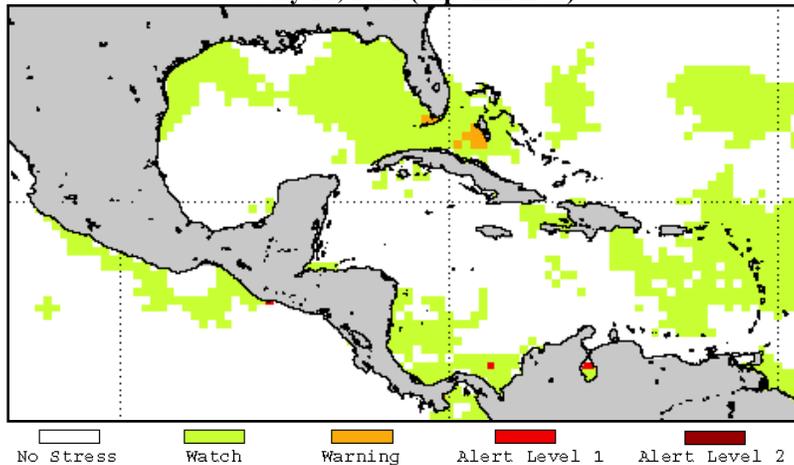


Figure 1. NOAA's Experimental Coral Bleaching Alert Areas for July 21, 2011.
http://coralreefwatch.noaa.gov/satellite/e50/e50_baa.html

Weather and Sea Temperatures

According to the latest NOAA Coral Reef Watch (CRW) experimental Satellite Coral Bleaching Alert Area, there is low level of thermal stress throughout the Florida Keys and there is potential for coral bleaching if current conditions continue (Fig. 1).

Current remote sensing analysis by NOAA's CRW program indicates that most of the Florida Keys region is presently experiencing thermal stress. NOAA's recent experimental Coral Bleaching HotSpot Map (Fig.2), which illustrates current sea surface temperatures compared to the average temperature for the warmest month, shows that sea surface temperatures are elevated for this time of year in the Florida Keys. Similarly, NOAA's latest experimental Degree Heating Weeks (DHW) map, which shows how much heat stress has built up over the past 12 weeks (Fig.3), shows that a low level of temperature stress has accumulated in the Florida Keys region. NOAA's Integrated Coral Observing Network (ICON) monitoring stations, which provide near real time *in-situ* sea temperature data along the outer reef tract throughout the Florida Keys, confirm that temperatures have increased slightly during the past three weeks and are presently near or exceeding 30°C (Fig.4), likely due in part to decreased wind speeds observed over the past two weeks (Fig. 5). *In-situ* sea temperature data is currently not available for Sand Key, Sombrero, or Dry Tortugas regions.

Mote Marine Laboratory will continue to monitor the NOAA HotSpot maps, DHW maps, and ICON sea temperature data from monitoring stations on a weekly basis for the remainder of the bleaching season.

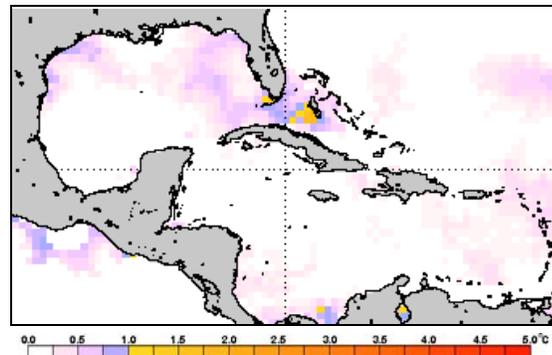


Figure 2. NOAA's Experimental Coral Bleaching HotSpot Map for July 21, 2011.
<http://coralreefwatch.noaa.gov/satellite/e50/>

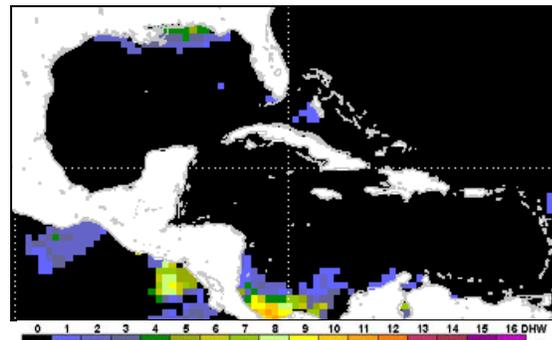


Figure 3. NOAA's Experimental Degree Heating Weeks Map for July 21, 2011.
<http://coralreefwatch.noaa.gov/satellite/e50/>

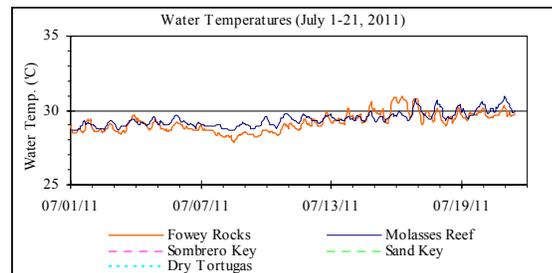


Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (July 1- 21, 2011).

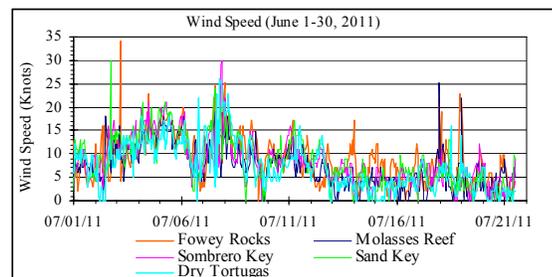


Figure 5. Wind speed data from NOAA/ICON monitoring stations (July 1-21, 2011).



Coral Bleaching Early Warning Network

Current Conditions Report #20110722



Conditions of Corals

A total of 46 BleachWatch Observer reports were received during the past three weeks, with 19 reports indicating only isolated colonies exhibiting signs of paling (Fig. 6) or partial bleaching. The remaining reports indicated that no significant signs of coral bleaching were observed. At those sites where partial bleaching, paling, or limited bleaching was noted (Fig.7), the overall percentage of corals exhibiting signs of thermal stress typically ranged from 1-10% of corals at each site.



Figure 6. *Siderastrea sidera* paling south of Munson Island on July 15, 2011.

The majority of isolated paling/partial bleaching observations consisted of Mound and Boulder corals (*Montastraea spp.*, and *Siderastrea spp.*) and Brain corals (*Diploria spp.*, *Colpophyllia natans*, and *Meandrina meandrites*).



Figure 8. *Palythoa caribaeorum* with slight paling on a reef 2 miles east of Looe on July 19, 2011.

Other observations included paling of *Palythoa spp.*(Fig. 8) and Fire Coral, as well as several reports of Black Band disease throughout the Lower, Middle and Upper Keys.

These isolated observations of paling and partial bleaching do not necessarily indicate the onset of a mass bleaching event; however, continued field observations are needed as more widespread coral bleaching could develop if environmental conditions continue to be favorable.

BleachWatch Reports for July 1-21, 2011

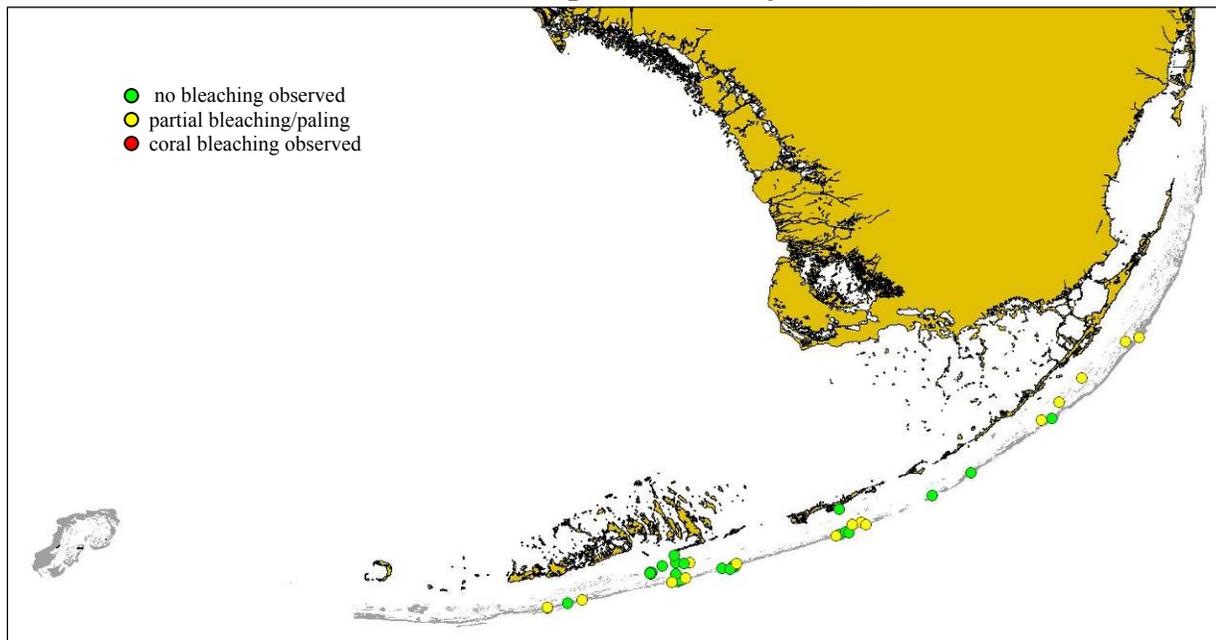


Figure7. Overview of BleachWatch observer reports submitted from July 1-21, 2011.

For more information about the BleachWatch program, or to submit a bleaching observation, contact:

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<http://www.mote.org/Keys/research/bleaching.phtml>

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